

# **PRELIMINARY CLOSE OUT REPORT**

## **GULFCO MARINE MAINTENANCE SUPERFUND SITE**



**FREEPORT, TEXAS**

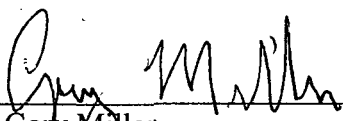
**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 6**

**SEPTEMBER 2011**

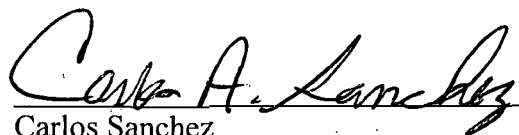


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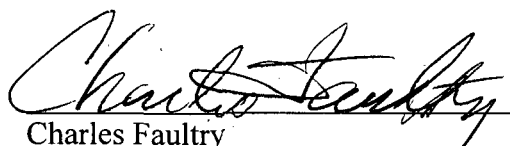
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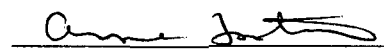
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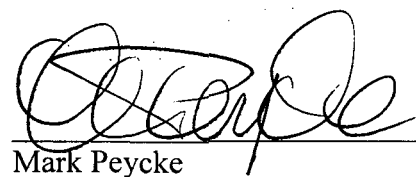
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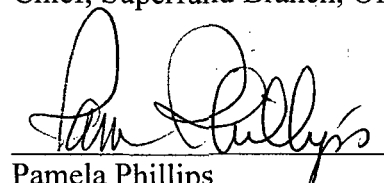
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**PRELIMINARY CLOSE OUT REPORT  
GULFCO MARINE MAINTENANCE SUPERFUND SITE  
FREEPORT, BRAZORIA COUNTY, TEXAS**

**I. INTRODUCTION**

This Preliminary Close Out Report (PCOR) documents that the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ) have completed, or have provided oversight for completion of, construction activities for the Gulfco Marine Maintenance Superfund Site (Site) in accordance with "Close Out Procedures for National Priorities List Sites" (OSWER Directive 9320.2-22, May 2011). The responsible parties completed a Time Critical Removal Action for the above ground storage tanks in March 2011 that removed contaminants that pose a risk to human health and the environment. In the Record of Decision (ROD), the EPA selected Alternative 2, which includes ground water controls and monitoring, as the remedial action to address the remedial action objectives for the Site. Alternative 2 does not contain any physical construction components because the EPA determined in the ROD that no physical construction is necessary to protect human health and the environment. The selected remedy is based, in part, on the previously completed removal action as described below. No final inspection is necessary for the Site because the ROD did not require any further construction activities.

**II. SUMMARY OF SITE CONDITIONS**

**Background**

The Site is located within the city limits of Freeport, Brazoria County, Texas. It consists of approximately 40 acres along the north bank of the Intracoastal Waterway between Oyster Creek and the Texas Highway 332 bridge. The Site includes approximately 1,200 linear feet of shoreline on the Gulf Intracoastal Waterway. Marlin Avenue, which runs approximately east to west, divides the Site into two primary areas. The property to the north of Marlin Avenue, or the North Area, consists of undeveloped land and the closed surface impoundments, while the property south of Marlin Avenue, or the South Area, was developed for industrial uses with multiple structures, a dry dock, sand blasting areas, a former aboveground storage tank (AST) tank farm, and two barge slips connected to the Intracoastal Waterway. The North Area is zoned as "M-2, Heavy Manufacturing." The South Area is zoned as "W-3, Waterfront Heavy" by the City of Freeport. This designation provides for commercial and industrial land use, primarily port, harbor, or marine-related activities.

The Site has a flat topography and is located within the 100-year coastal floodplain. Most of the North Area is considered wetlands although there are some upland areas created from dredged spoil material. The South Area includes approximately 20 acres of upland created from material dredged from the Intracoastal Waterway. Ground surface elevations range from 1.5 feet above mean sea level (MSL) north of the Site to 5.6 feet above MSL within the South Area.

The Site underwent several ownerships and operated as a barge cleaning and repair facility from 1971 to about 1998. Barges brought to the facility were cleaned of waste oils, caustics, and organic chemicals. Three surface impoundments covering an area of approximately 2.5 acres were located in the North Area. They were used for storage of these materials and waste wash waters generated during barge cleaning activities until 1981. The surface impoundments were closed in accordance with a Texas Water

Commission (now the TCEQ) approved plan, with closure certification provided on August 24, 1982. Impoundment closure activities involved removal of liquids and most of the impoundment sludges prior to closure. The sludge that was difficult to excavate (approximately 100 cubic yards of material) was solidified with soil and left in place. The impoundments were capped with three-feet of clay and a hard-wearing surface (i.e. shell).

The EPA issued a Unilateral Administrative Order (UAO, EPA 2005), effective July 29, 2005, to the Potentially Responsible Parties (PRPs) to perform a Remedial Investigation (RI) to define the nature and extent of contamination at the Site, and to prepare a Feasibility Study (FS) to identify and screen remedial action alternatives.

Remedial investigation activities at the Site began in 2006. These activities included the collection and analyses of soil, sediment, surface water, groundwater, and fish tissue samples. Results of these analyses were summarized in the 2009 Nature and Extent Data Report, and the Remedial Investigation was completed in 2011. The Baseline Human Health Risk Assessment evaluated the site data and the potential significance of the complete human health exposure pathways. It concluded that there were no unacceptable cancer risks or non-cancer hazard indices for commercial/industrial land use except for exposure of an indoor industrial worker in a future building constructed over impacted groundwater in the North Area. The Baseline Ecological Risk Assessment concluded that there is no difference in the toxicity observed in samples collected at the Site and the background locations, and there is no Site related ecological toxicity associated with the sediment or surface water.

The RI, FS, Baseline Human Health Risk Assessment, Baseline Ecological Risk Assessment, and Screening Level Ecological Risk Assessment Reports support the EPA's Selected Remedy described in the Record of Decision (ROD).

Institutional controls in the form of restrictive covenants prohibiting any land use other than commercial or industrial and prohibiting ground water use have been filed for all parcels within both the North and South Areas. Additional restrictions requiring any building design to preclude indoor vapor intrusion and requiring EPA and TCEQ notification prior to any building construction have been filed for Lots 55, 56 and 57 of the North Area.

### **National Priorities List**

The EPA proposed the Site for listing on the National Priorities List (NPL) on September 5, 2002 (67 FR 56794), and the Site was placed on the NPL effective May 30, 2003, in a final rulemaking published on April 30, 2003 (68 FR 23077).

### **Removal Action**

The EPA issued an Administrative Settlement Agreement and Order on Consent for Removal Action (Settlement Agreement, EPA 2010) on October 26, 2010, addressing the former Above Ground Storage Tank (AST) Tank Farm located in the South Area. The Settlement Agreement required the removal of the ASTs that contained hazardous substances from the barge cleaning operations. The removal work began in November 2010 and was completed by March 2011.

The AST Tank Farm consisted of two adjacent bermed areas with six ASTs located in the north bermed area and eight ASTs located in the south bermed area. The tanks were used to store materials recovered from the barges and wash water associated with barge cleaning operations. The removal action included characterization and disposal of the water within the berms and removal and disposal of the liquid and solid wastes within the tanks. Tank sludges were stabilized with fly ash prior to removal.

After removal of the materials within the tanks, the tanks were cleaned by scraping, brushing, steam-cleaning, and, where necessary, spraying and brushing with surfactants to remove any oily residue. Then, following tank decontamination, the tanks were demolished and hauled away for disposal. Additional materials demolished and removed include piping, metal cat-walks, debris, and a steel hopper-like structure. The concrete walls and floors in the containment areas were cleaned by pressure washing with a steam cleaner and the concrete containment berms were breached so that rainfall would not accumulate in the area.

Hazardous liquid and solid wastes were disposed of at the Clean Harbors facility in Deer Park, Texas. Non-hazardous waste liquids were disposed of in the Waste Management Coastal Plains facility in Alvin, Texas. All scrap metal from the Removal Action was transported to Proler Recycling in Houston, Texas for recycling.

During the removal action it was discovered that the caliche and soil floor in the north containment area was contaminated below four of the tanks. The visibly contaminated soil, which existed to a depth of about 5.5 feet, was excavated to a maximum depth of about 6 feet and confirmatory soil samples were collected. The excavated soil was characterized and found to be hazardous. This soil was sent off-site to the Clean Harbors facility for incineration. The confirmatory samples confirmed that the remaining soil below the northern containments area was within the acceptable risk range for carcinogens and below a hazard quotient of one for non-carcinogens based on an industrial/commercial exposure scenario. The excavated areas were backfilled with soil imported from an off-site quarry. A total of approximately 91,000 gallons of liquids and 964,000 pounds of solid materials were disposed of at off-site facilities.

### **Remedy Selection**

The Remedial Action Objectives for the Site were identified mainly based on concerns related to future human health exposure associated with North Area former impoundments and groundwater. The RAOs for the Site are: 1) to confirm, on an ongoing basis, the stability of the VOC and SVOC plumes in Zones A and B both in terms of lateral extent, and the absence of impacts above screening levels to underlying water bearing zones; 2) to maintain, as necessary, protection against potential exposures to volatile organic compounds at levels posing an unacceptable risk via the groundwater to indoor air pathway; 3) to prevent land use other than commercial/industrial; 4) to prevent groundwater use; and 5) to prevent potential future exposure to remaining waste material in the former impoundments.

The EPA, with the concurrence of the State of Texas, signed the ROD for the Site in September 2011. The EPA selected Alternative 2 (Ground Water Controls and Monitoring) as the remedial action to address the remedial action objectives for the Site.

The selected remedy for the Site, Alternative 2, includes the following components:

1. Review and evaluation of the current restrictive covenants prohibiting ground water use at the Site, and requiring commercial/industrial land use at the Site, and protection against indoor

vapor intrusion for building construction on Lots 55, 56, and 57;

2. Modification of the existing Institutional Controls (ICs) to: address any issues identified with the current restrictive covenants after review; identify the type and location of hazardous substances; identify the location of the existing cap and restrict actions that might affect the integrity of the cap; and any other necessary modifications;
3. A cap over the former surface impoundments; this cap was previously installed in 1982 as described above;
4. Annual ground water monitoring, and monitoring as part of the Five-Year Reviews, to confirm stability of the affected ground water plume; all of the required groundwater monitoring wells were installed during the RI/FS; and
5. Implementation of an Operation and Maintenance Plan to provide ground water monitoring and inspection/repair of the cap covering the former surface impoundments.

Institutional controls, in the form of restrictive covenants, would continue to be implemented to maintain, as necessary, protection against potential exposures to volatile organic compounds at levels posing an unacceptable risk via the ground water to indoor air pathway; to prevent land use other than commercial/industrial; and to prevent ground water use. In conjunction with the restrictive covenant review/evaluation component of Alternative 2, it is anticipated that one or more modifications to the current ICs will be required, including modifications to describe the type and location of hazardous substances, and the location of the cap, and restrictions to protect the integrity of the cap.

For the ground water monitoring component of Alternative 2, the continued stability of the affected ground water plume will be verified by an evaluation of the trends of the ground water chemicals of interest. The ground water chemicals of interest include 1,1,1-TCA; 1,1-dichloroethene (1,1-DCE); 1,2,3-trichloropropane (1,2,3-TCP); 1,2-dichloroethane (1,2-DCA); benzene; cis-1,2-dichloroethene (cis-1,2-DCE); methylene chloride; PCE; TCE; and vinyl chloride (VC).

### **III. DEMONSTRATION OF CLEANUP ACTIVITY QUALITY ASSURANCE AND QUALITY CONTROL**

The Potentially Responsible Parties (PRP) implemented a time critical removal action for the Gulfco Marine Maintenance Site through their contractor, Pastor, Behling, and Wheeler, LLC, who directed the activities of Effective Environmental, Inc., the removal action contractor who conducted the field construction activities at the Site. The EPA and the EPA's contractor, EA Engineering, Science, and Technology, Inc., provided oversight of this work.

This work was performed in accordance with the Construction Quality Assurance Plan contained in the removal work plan, which is attached to the Administrative Order on Consent for this removal action. A Quality Assurance inspector, provided by Pastor, Behling, and Wheeler, LLC, was on-site to monitor the performance of all tank removal, truck loading, tank decontamination, and tank demolition activities to verify that the removal action activities were performed in accordance with the work plan and project specifications. The inspector also verified compliance with environmental requirements and ensured compliance with all health and safety procedures.

During the solidification and sludge removal activities, air monitoring was conducted with an organic vapor meter in order to stay within the appropriate air criteria. The vents from tankers were routed through carbon canisters so that no contaminants would be vented from the tankers during filling. The exhaust from the carbon canisters was checked periodically for breakthrough.

Samples collected during the removal action were secured using appropriate chain-of custody procedures to ensure sample integrity.

#### IV. ACTIVITIES AND SCHEDULE FOR SITE COMPLETION

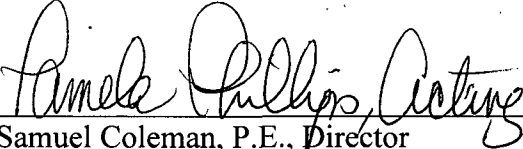
The following activities remain for the Gulfco Marine Maintenance Site:

Task	Estimated Completion	Responsibility
Prepare O&M Plan Including Cap Inspection & Repair Plan, and Groundwater Monitoring Plan	July 2012	GRG
Conduct O&M Inspections and Groundwater Monitoring	Annually	GRG
Implement Institutional Controls	September 2012	GRG
1 <sup>st</sup> 5-Year Review	August 2016	EPA
Delete Gulfco Site From NPL	To Be Determined	EPA

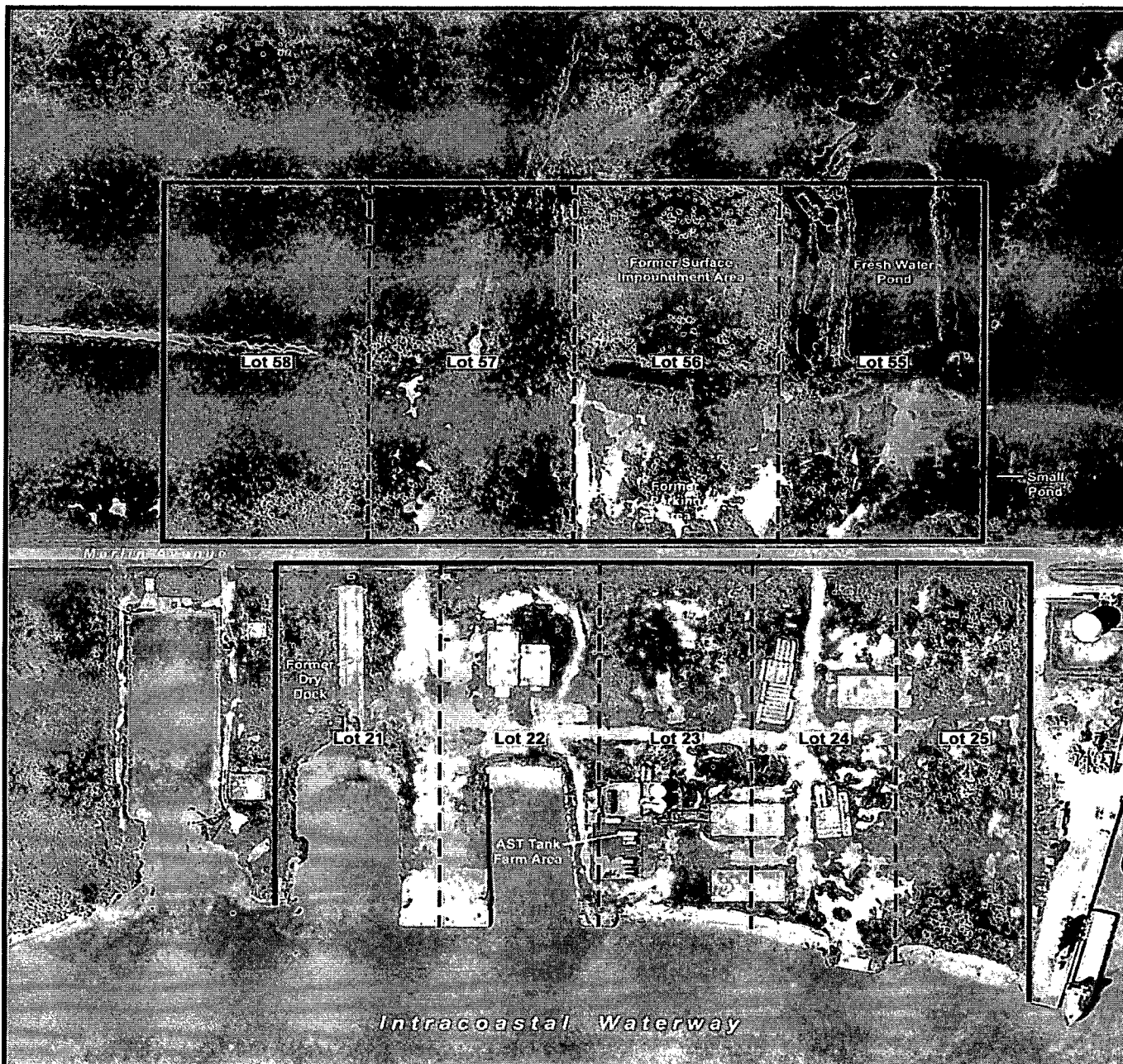
GRG: Gulfco Restoration Group (Site PRPs)

#### VI. FIVE-YEAR REVIEW

Hazardous substances will remain at the Gulfco Marine Maintenance Superfund Site above levels that allow for unlimited use and unrestricted exposure after completion of the remedial action. Pursuant to CERCLA section 121(c), 42 U.S.C. § 9621(c), and as provided in the current guidance on Five-Year Reviews: EPA 540-R-01-007, OSWER No. 9355.7-03B-P, *Comprehensive Five-Year Review Guidance*, June 2001, EPA will conduct a statutory five-year review for the Site. The first five year review will be completed by August 2016, five years following issuance of the ROD.

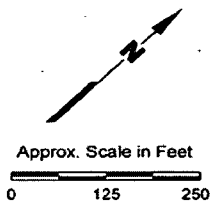
  
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Samuel Coleman, P.E., Director  
Superfund Division (6SF)

  
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Date



### EXPLANATION

- Gulfco Marine Maintenance Site Boundary (approximate)
- - Lot Boundary (approximate)



Source of photo: H-GAC, Texas aerial photograph, 2006.

### GULFCO MARINE MAINTENANCE FREEPORT, BRAZORIA COUNTY, TEXAS

Figure 2  
**SITE MAP**

PROJECT: 1352	BY: ZGK	REVISIONS
DATE: APRIL, 2011	CHECKED: EFP	

**PASTOR, BEHLING & WHEELER, LLC**  
CONSULTING ENGINEERS AND SCIENTISTS